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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/659,781	09/11/2000	Nadarajah Asokan	017.38633X00	5149

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EXAMINER

WORJLOH, JALATEE

ART UNIT	PAPER NUMBER
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3621

DATE MAILED: 12/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/659,781

Applicant(s)

ASOKAN ET AL.

Examiner

Jalatee Worjloh

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4,7 and 9-23 is/are rejected.
- 7) ☒ Claim(s) 5,6,8 and 10 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. Claims 1-23 have been examined.

Specification

2. The disclosure is objected to because of the following informalities: identify GSM (see pg. 6, line 19); that is, change "GSM" to "Global System for Mobile Communications (GSM)".

Appropriate correction is required.

Claim Objections

3. Claim 10 is objected to because of the following informalities: typographical error, change "creating the an accounting..." to "creating an accounting". Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 3, 4 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 1 recites the limitation "variables computed" in lines 6 and 7. There is insufficient antecedent basis for this limitation in the claim.

7. Claim 3 recites the limitation "the integrity" in line 1. There is insufficient antecedent basis for this limitation in the claim.

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8. Claim 9 recites the limitation "wherein the requesting a product or server from a seller..." in line 1. There is insufficient antecedent basis for this limitation in the claim. Note. The Applicant submitted a Pre-Amendment and deleted the step of requesting a product or service... from independent claim 1. Therefore, claim 9 is rejected as best understood (see 103 rejection below).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5467398 to Pierce et al in view of European Patent No. 0651533 to Diffie et al.

Pierce et al. disclose accessing a gateway by the mobile station and transmitting an identification code for mobile station to the gateway (see col. 3, lines 32-35; col. 4, lines 16-20), verifying the identity of the mobile station by the gateway by accessing an authentication center and comparing variables computed by the mobile station and variables computed by the gateway (see col. 4, lines 25-35). Pierce et al. do not expressly disclose delivering a digital certificate to the mobile station by the gateway when the identity of the mobile station have been verified or transmitting a digital signature by the mobile station accompanied by the digital certificate for a signature verification key to said service provider. Diffie et al. disclose delivering a digital certificate to the mobile station by the gateway when the identity of the mobile station have been

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verified (see pg. 5, lines 32-33) and transmitting a digital signature by the mobile station accompanied by the digital certificate for a signature verification key to said service provider (see pg. 2, lines 31-33). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method disclose by Pierce et al. to include the steps of delivering a digital certificate to the mobile station by the gateway when the identity of the mobile station have been verified and transmitting a digital signature by the mobile station accompanied by the digital certificate for a signature verification key to said service provider. One of ordinary skill in the art would have been motivated to do this because it provides security; that is, it utilizes digital certificates and signatures, which verifies the identity of the user.

Referring to claim 12, Pierce et al. disclose verifying the legitimacy of the gateway by the mobile station by comparing the variables computed by the gateway with the variables computed by the mobile station (see col. 4, lines 25-35).

11. Claims 2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pierce et al. and Diffie et al. as applied to claim 1 above, and further in view of U.S. Patent No. 6062472 to Cheung.

Pierce et al. disclose transmitting from the mobile station to the gateway a session identification and an international mobile subscriber identifier and transmitting the international mobile subscriber identifier from the gateway to the authentication center (see col. 3, lines 53-56, 61-64). Pierce et al. do not expressly disclose transmitting from the authentication center to the gateway a random number (RAND), a signed response (SRES), and an encryption key; computing a variable M1 by the gateway and transmitting the variable M1 and the random

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number to the mobile station, computing a variable $M1'$ by the mobile station; or verifying the legitimacy of the gateway when the variable $M1$ equals the variable $M1'$. Cheung discloses transmitting from the authentication center to the gateway a random number (RAND), a signed response (SRES), and an encryption key; computing a variable $M1$ by the gateway and transmitting the variable $M1$ and the random number to the mobile station, computing a variable $M1'$ by the mobile station; and verifying the legitimacy of the gateway when the variable $M1$ equals the variable $M1'$ (see col. 3, lines 47-57, 63-67; col. 4, lines 1-11). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method disclose by Pierce et al. to include the steps of transmitting from the authentication center to the gateway a random number (RAND), a signed response (SRES), and an encryption key; computing a variable $M1$ by the gateway and transmitting the variable $M1$ and the random number to the mobile station, computing a variable $M1'$ by the mobile station; and verifying the legitimacy of the gateway when the variable $M1$ equals the variable $M1'$. One of ordinary skill in the art would have been motivated to do this because it provides security.

Referring to claim 7, Cheung discloses transmitting a signed response, public key and a variable $M2$ computed by the gateway, computing a variable $M2'$ by the gateway, and verifying the identity of the mobile station when the variable $M2$ equals the variable $M2'$ (see col. 3, lines 47-57, 63-67; col. 4, lines 1-11).

12. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pierce et al. and Diffie et al. as applied to claim 1 above, and further in view of U.S. Patent No. 6285991 to Powar.

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Power disclose transmitting the certificate with the request for the product or service (see col. 10, lines 14-27), receiving an invoice from the seller indicating a price for the product or service, computing a digital signature on the invoice (see col. 1, lines 7-20), approving the invoice by transmitting the digital signature to the seller (see col. 11, lines 59-60; col. 12, lines 1-8). As for accepting delivery of the product or service by the buyer, this is an inherent step; that is, if the customer approves the invoice, he is accepting delivery of the product. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method disclose by Pierce et al. to include the step transmitting the certificate, receiving an invoice, computing a digital signature, approving the invoice and accepting the delivery. One of ordinary skill in the art would have been motivated to do this because it confirms the requester identity thus, preventing fraud.

Referring to claim 10, Power discloses verifying the digital signature, verifying that restrictions associated with the digital certificate are not violated (see col. 10, lines 29-61). Although, Power does not explicitly disclose creating the account record, this is an inherent step. That is, Power discloses comparing account records; before the records can be compare it must first be created.

13. Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pierce et al., Diffie et al. and Power et al. as applied to claim 10 above, and further in view of International Publication No. WO 99/49404 to Cochinwala et al.

Cochinwala et al. disclose transmitting from the seller to the gateway the accounting record having an invoice and digital signature of a customer of a home network operator service, determining by the gateway that a corresponding record exists in a local database and the validity

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of the digital signature, determining whether the invoice violates any restrictions contained in the corresponding record, crediting the seller with an amount equal to that in the invoice and billing the buyer with the amount of the invoice (see Abstract, lines 7-8, pg. 4, lines 19-25). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method disclose by Pierce et al. to include the steps of disclose transmitting from the seller to the gateway the accounting record having an invoice and digital signature of a customer of a home network operator service, determining by the gateway that a corresponding record exists in a local database and the validity of the digital signature, determining whether the invoice violates any restrictions contained in the corresponding record, crediting the seller with an amount equal to that in the invoice and billing the buyer with the amount of the invoice. One of ordinary skill in the art would have been motivated to do this because provides security.

Referring to claim 13. Diffie et al. disclose delivering a certificate to the mobile station (see pg. 5, lines 32-33). Diffie et al. do not explicitly disclose requesting a digital certificate by the mobile station form the gateway used to order and pay for a product or service form a seller, but his step is an inherent step. That is, before delivering a certificate, it must first be requested.

14. Claims 14,15, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pierce et al. in view of Cheung.

Pierce et al. disclose a GSM authentication module to verify that the mobile station is permitted to access a telecom infrastructure (see col. 4, liens 25-35), a gateway certificate generation module to verify that the mobile station is authorized to receive the digital certificate by transmitting an international mobile subscriber identifier received from the mobile station to an authentication center (see col. 3, lines 53-56,61-64). Pierce et al. do not expressly disclose a

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mobile station certificate acquisition module to request a digital certificate for the mobile station from a gateway and verify that the gateway is authorized to issue the digital certificate through the use of comparing variables computed by the gateway and the mobile station, a gateway certificate generation module to calculate variables based on information received from the authentication center and compare them to variable computed by the mobile station, and issue the digital certificate to the mobile station when the variables match. Cheung discloses disclose a mobile station certificate acquisition module to request a digital certificate for the mobile station from a gateway and verify that the gateway is authorized to issue the digital certificate through the use of comparing variables computed by the gateway and the mobile station, a gateway certificate generation module to calculate variables based on information received from the authentication center and compare them to variable computed by the mobile station, and issue the digital certificate to the mobile station when the variables match (see col. 3, lines 47-51, 63-64; col. 4, lines 1-11). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify system disclose by Pierce et al. to include disclose a mobile station certificate acquisition module to request a digital certificate for the mobile station from a gateway and to verify that the gateway is authorized to issue the digital certificate a gateway certificate generation module to calculate variables based on information received from the authentication center and compare them to variable computed by the mobile station, and issue the digital certificate to the mobile station when the variables match. One of ordinary skill in the art would have been motivated to do this because it provides security; that is, it utilizes digital certificates which verifies the identity of the user; thus, preventing fraud.

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Referring to claim 19 and 20 see the rationale above; as per the code segments, Cheung discloses software within the control means (see col. 3, lines 39-45). It is known in that art that software comprises code; thus, the examiner notes that this code may include authentication code, certificate acquisition code, certificate generation code.

15. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pierce et al. and Cheung as applied to claim 15 above, and further in view of Powar and Cochinwala et al.

Powar discloses a buyer purchase module to request the purchase of a good or service from a seller, present the digital certificate to the seller, receive an invoice and provide the seller with a digital signature approving the purchase of the good or service (see col. 10, lines 14-27; col. 11, lines 7-20, 59-60; col. 12, lines 1-8), a seller sales module to verify the validity of the digital certificate and the validity of the digital signature, issue an invoice, generate an accounting record and deliver a product or service (see col. 10, lines 29-61). Powar does not expressly disclose a seller billing module to transmit to the gateway the accounting record and receive a response indicating if the accounting record has been approved for payment, or a gateway billing module to verify the accounting record and an accompanying signature, and issue a credit to the seller and debit to the buyer when the accounting record and the accompanying signature are verified. Cochinwala et al. disclose a seller billing module to transmit to the gateway the accounting record and receive a response indicating if the accounting record has been approved for payment, and a gateway billing module to verify the accounting record and an accompanying signature, and issue a credit to the seller and debit to the buyer

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when the accounting record and the accompanying signature are verified (see abstract, lines 7-8; pg. 4, lines 19-25). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the system disclose by Pierce et al. to include a seller billing module to transmit to the gateway the accounting record and receive a response indicating if the accounting record has been approved for payment, and a gateway billing module to verify the accounting record and an accompanying signature, and issue a credit to the seller and debit to the buyer when the accounting record and the accompanying signature are verified. One of ordinary skill in the art would have been motivated to do this because it provides security; that is, it utilizes digital certificates and signatures, which verifies the identity of the user.

Referring to claim 17, Pierce et al. disclose the method where in the gateway certificate generation module an international mobile subscriber identifier to authentication center (see col. 3, lines 53-56, 61-64). Pierce et al. do not expressly disclose receiving a random number, a signed response and an encryption key from the authentication center, computing a variable M1, M2' and M3 and verifying the validity of the mobile station by comparing variable M2 received from the mobile station with variable M2'. Cheung discloses the gateway certificate generation module receives a random number (RAND), a signed response (SRES), and an encryption key from the authentication center; computes a variable M1, M2', and M3 and verifies the validity of the mobile station by comparing variables M2 received from the mobile station with variable (see col. 3, lines 47-57, 63-67; col. 4, lines 1-11). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the system disclose by Pierce et al. to include the gateway certificate generation module receives a random number (RAND), a signed response (SRES), and an encryption key from the authentication center; computes a

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variable M1, M2', and M3 and verifies the validity of the mobile station by comparing variables M2 received from the mobile station with variable. One of ordinary skill in the art would have been motivated to do this because it provides security.

16. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pierce et al. and Cheung as applied to claim 14 above, and further in view of "The GSM System" to Mouly et al.

Mouly et al. disclose a subscriber identification module (SIM) used to compute a signed response and a ciphering key based on a secret key, installed by a home network operator service in the subscriber identification module upon signing up for a service plan, and a random number obtained from an authentication center in the home network operator service; an A3 algorithm module, contained in the SIM, is used to compute the signed response; and an A8 algorithm module, contained in the SIM, is used to compute the ciphering key, wherein through the transmission of signed responses to and from the mobile station a telecommunication infrastructure is able to verify that the mobile station is authorized to access the telecommunication infrastructure and the gateway (see pg. 478-480). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the system disclosed by Pierce et al. to include a subscriber identification module, A3 algorithm module, an A8 algorithm module. One of ordinary skill in the art would have been motivated to because such modules are well known in the art.

17. Claims 21 –23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pierce et al. and Cheung as applied to claim 19 above, and further in view of Powar and Cochinwala et al.

Powar discloses a buyer purchase code segment to request the purchase of a good or service from a seller, present the digital certificate to the seller, receive an invoice and provide the seller with a digital signature approving the purchase of the good or service (see col. 10, lines 14-27; col. 11, lines 7-20, 59-60; col. 12, lines 1-8), a seller sales code segment to verify the validity of the digital certificate and the validity of the digital signature, issue an invoice, generate an accounting record and deliver a product or service (see col. 10, lines 29-61). Powar do not expressly disclose a seller billing code segment to transmit to the gateway the accounting record and receive a response indicating if the accounting record has been approved for payment, or a gateway billing code segment to verify the accounting record and an accompanying signature, and issue a credit to the seller and debit to the buyer when the accounting record and the accompanying signature are verified. Cochinwala et al. disclose a seller billing code segment to transmit to the gateway the accounting record and receive a response indicating if the accounting record has been approved for payment, and a gateway billing code segment to verify the accounting record and an accompanying signature, and issue a credit to the seller and debit to the buyer when the accounting record and the accompanying signature are verified (see abstract, lines 7-8; pg. 4, lines 19-25). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the system disclose by Pierce et al. to include a seller billing code segment to transmit to the gateway the accounting record and receive a response indicating if the accounting record has been approved for payment, and a gateway billing code segment to verify the accounting record and an accompanying signature, and issue a credit to the seller and debit to the buyer when the accounting record and the accompanying signature are verified. One of ordinary skill in the art would have been motivated to do this

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because it provides security; that is, it utilizes digital certificates and signatures, which verifies the identity of the user.

Referring to claim 22, Pierce et al. disclose the mobile certificate acquisition code segment transmits a session identification and an intonation mobile subscriber identifier to the gateway, receives a random number and a variable M1 from the gateway and verifies that the gateway is authentic by computing and comparing the variable M1' with M1 (see col. 3, lines 53-56, 61-64).

Referring to claim 23, Pierce et al. disclose the method wherein the gateway certificate generation code segment transmits an international mobile subscriber identifier to authentication center (see col. 3, lines 53-56, 61-64). Pierce et al. do not expressly disclose receiving a random number, a signed response and an encryption key from the authentication center, computing a variable M1, M2' and M3 and verifying the validity of the mobile station by comparing variable M2 received form the mobile station with variable M2'. Cheung discloses the gateway certificate generation code segment receives a random number (RAND), a signed response (SRES), and an encryption key from the authentication center; computes a variable M1, M2', and M3 and verifies the validity of the mobile station by comparing variables M2 received form the mobile station with variable (see col. 3, lines 47-57, 63-67; col. 4, lines 1-11). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the system disclose by Pierce et al. to include the gateway certificate generation code segment receives a random number (RAND), a signed response (SRES), and an encryption key from the authentication center; computes a variable M1, M2', and M3 and verifies the validity of the

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mobile station by comparing variables M2 received from the mobile station with variable. One of ordinary skill in the art would have been motivated to do this because it provides security.

Allowable Subject Matter

18. Claims 5, 6 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jalatee Worjloh whose telephone number is 703-305-0057. The examiner can normally be reached on Mondays-Thursdays 8:30 - 7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Trammell can be reached on 703-305-9768. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

Any response to this action should be mailed to: **Commissioner of Patents and Trademarks, Washington, DC 20231.**

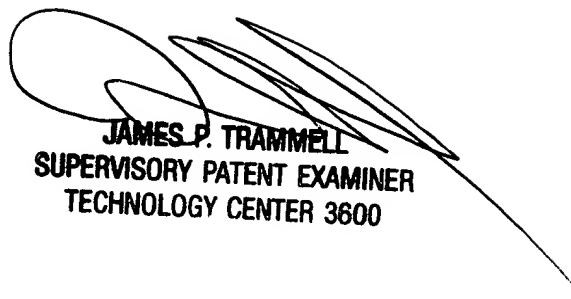
Hand delivered responses should be brought to Crystal Park 5, 2451 Crystal Drive, Arlington, V.A., Seventh floor receptionist.

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November 26, 2002



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